

Book Review

Cane toads: a tale of sugar, politics and flawed science

By Nigel Turvey, Sydney University Press (2013). ISBN: 9781743323595

The introduction of the cane toad (*Rhinella marina*) to Australia in 1935 in a misguided attempt to control sugar cane pests is an episode in our environmental and scientific history that we agree ought never be repeated. With the benefit of hindsight, we can collectively shake our heads in disbelief that such a course of action was ever considered, let alone implemented. But what were the circumstances that lead up to this disastrous event? Who made this decision, based on flawed science and an apparently unshakeable belief that humans could control and harness nature? And what of the dissenters, whose warnings were ignored? We could, after all, be condemned to repeat the mistakes of the past if we fail to learn from them.

As we witness the expanding domain of the cane toad through northern Australia and into the west, this well-researched history of the toad's disastrous introduction is timely. Nigel Turvey traces the development and increasing economic importance of the colonial sugar industry through the Caribbean, Hawaii and Queensland. Of course, the clearing of native habitat and ensuing intensive monoculture unleashed a plethora of new (mostly insect) pests that were capable of devastating crops. In an age where insecticides were crude and mostly ineffective (if not downright dangerous), biological control of pests by predators quickly gained popularity. By the end of the nineteenth century, entomologists and agriculturalists throughout the colonies were responsible for hundreds of alien introductions in the guise of biological control. Results were mixed; introduction successes were comparatively rare and heavily praised, while many more attempts were complete failures. Few were perceived as disastrous, and these mostly occurred on islands so their devastating impact was locally contained.

By the 1920s, there was strong political imperative in Queensland to increase sugar cane yields and bolster a flagging industry. Turvey documents the establishment

of the BSES (Bureau of Sugar Experiment Stations) throughout the state to research and implement measures to increase the sugar crop. Pests were rampant, biological control by cane toads could be easily implemented and had reportedly been effective in controlling cane pests in Hawaii. The main players are identified: government scientists, politicians, and a lone dissenting entomologist, Walter Froggatt. Turvey describes the ensuing sequence of events framed in the cultural, scientific and political mindset of the day, and the impending ecological tragedy unfolds.

Turvey has produced a fascinating exploration into the history of a biological disaster. He has made excellent use of historical records to gain insight into the decision-making processes of the time, and of scientific publications to catalogue the state of current research in cane toad biology and control. The book is well illustrated with photographs. Although at times the author diverts into unnecessary details and could perhaps have benefitted from a more focussed edit, overall the book is written in an engaging and accessible style, and will appeal to a wide audience.

Turvey's final chapter is compelling. After witnessing and living with the effects of a disastrous scientific decision, could such an event happen again? Would scientists and politicians fail to recognise a potentially catastrophic ecological impact from another source? A genetically modified organism perhaps, or an attempt to save an endangered species from overseas? Would political imperative override scientific warnings? Turvey's chilling conclusion is that it could. We all have a duty to remain vigilant.

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